"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

GORNOVESOV, V.G.; RUBTSOV, P.A.

"Mechanization of livestock farms" by N.G. Sominich. Reviewed by V.G.Gornovesov and P.A.Rubtsov. Mekh. i elk. sots. sel'khoz. 16 no.4:61-63 '58. (MIRA 11:10)
(Farm mechanization) (Sominich, N.G.)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, I. A.

Cand. Technical Sci.

Mbr., Inst. Mechanization & Electrification Agriculture, Kazakh Affil., All-Union Acad. Agricultural Sci. im. Lenin, -c1950-.

"Electric Drive of Cream Separators," Elektricichestvo, No. 5, 1949;

"Type and Power of Electric Motors for Driving Milk Separators," ibid., No. 10, 1950.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, P.

28560

Osnovnyye Voprosy Myekhan Izatsii Zhivotnovodstva Kazakhstana Bolbshyevik Kazakhstana, 1949, No. 9, s. 17-23
7. Ozhota Pushnoye Zvyerdodstvo
Rybovodstvo I Rybolovstvo
Morskiye Promysly

SO: LETOPIS NO. 38

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, P.I.; OSMOLOVSKIY, F.A.

Introducing drum-type machine-tool unit. Biul.tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 18 no.11:23-25 N '65.

(MIRA 18:12)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, P.I.

25(1) PHASE I BOOK EXPLOITATION SOV/2383

Akademiya nauk SSSR. Komissiya po tekhnologii mashinostroyeniya

Avtomatizatsiya mashinostroitel'nykh protsessov. t. II: Privod i upravleniye rabochimi mashinami (Automation of Machine-building Processes. Vol 2: Drives and Control Systems for Process Machinery) Moscow, Izd-vo AN SSSR, 1959. 370 p. Errata slip inserted. 5,000 copies printed.

Ed.: V.I. Dikushin, Academician; Ed. of Publishing House: D.M. Ioffe; Tech. Ed.: I.P. Kuz'min.

PURPOSE: This book is intended for engineers dealing with automation of various machine-building processes.

COVERAGE: This is the second volume of transactions of the second Conference on Overall Mechanization and Automation of Manufacturing Processes held September 25-29, 1956. The present volume consists of three parts, the first dealing with automation of engineering measuring methods. The subjects discussed include automatic control of dimensions of machined parts, inspection methods for automatic production lines, in-process inspection devices, application of electronics in automating linear measuring processes, and machines for automatic inspection of bearing races. The second part deals with automatic drives and control systems for process machinery, including application of digital computers in the control of metal-cutting machine tools, reliability of relay systems, application of gas-tube frequency converters in the control of induction motor speeds, magnetic amplifiers and their use in automatic systems, hydraulic drives, and ultrasonic vibrators. Part three deals with mechanisms of automatic machines and automatic production lines. The subjects discussed include linkage, indexing, and Geneva-wheel-type mechanisms, friction drives, automatic loading devices, diaphragm-type pneumatic drives, various auxiliary devices for automatic production lines, and methods of design and accuracy of cams. No personalities are mentioned. There are no references.

Nakhapetyan, Ye. G. Dynamics and Type of Wear of Geneva-wheel Mechanisms 210

Shekhvits, K.I. Study of Indexing Mechanisms for Tables and Drums of Automatic Machines 222

Cherkudinov, S.A. Linkage Mechanisms of Heavy-duty Drawing Presses 253

Berkov, G.A. Controlled Friction Drives Made by TsNIITMASh 270

Preis, V.P. Some Problems in the Theory of Loading and Positioning Devices 278

Nedvig, M.V. Automatic Feeding of Piece Stock Into Working Machines 292

Kasyanov, M.I. Vibratory Loaders for Machine Tools 311

Rubtsov, P.I. Experience Gained by the Artsavod imeni Likhacheva in Developing Standard Mechanisms for Automating Auxiliary Operations in Metal-cutting Machine Tools 326

Gerts, Ye. Y. Designing Diaphragm-type Pneumatic Drives 336

Bron, L.S. Standard Auxiliary Devices for Automatic Lines 352

Berun, F.L. Problems of Profile Design and Cam Accuracy for Process Machinery in Vacuum Tube Industry 363

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTOV, S.

"Problem of Production Reports in Forest Nurseries." P. 319. (ANALELE ROMANO-SOVIETIC, Vol. 69, No. 6, June, 1954, Bucuresti, Rumania,)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955 Uncl.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, STEFAN

RUMANIA / Cultivated Plants. Experimental Methodology M

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34588

Author : Rubtsov, Stefan
Inst : Not given
Title : Simple Methods for the Organization of Data-Yielding Experiments in Forest Nurseries.

Orig Pub : Rev. padurilor., 1956, 71, #9, 581-583

Abstract : None given

Card 1/1

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTOV, S.

"Stimulation of the growth of seedlings in nurseries; results of research after the first year of experimentation. II. p. 490. (REVISTA PADURILOR, Vol. 69, no. 11, Nov. 1954. Bucuresti, Rumania.)

SO: Monthly List of East European Accessions, (EEAL), LC. Vol. 4, No. 5, May 1955, Uncl.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUB'TOV, S.; BINDIU, C.

"Effect of protective strata and the depth of sowing on sprouts and the growth of oak seedlings in nurseries." p. 412. (REVISTA PADURILOR, Vol 69, no. 9, Sept. 1954. Bucuresti, Rumania).

SO: Monthly List of East European Accessions, (EEAL), LC.
Vol. 4, No. 5, May, 1955, Uncl.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

NEDTOV, S.

"Stimulation of the growth of seedings in nurseries; establishment of research and working conditions", p. 435, (LUCRARI PARTICLE, Vol. 69, No. 10, Oct. 1954, Bucuresti, Rumania)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, April 1955, Uncl.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

Rubtsov, St.

K

RUMANIA / Forestry. Forest Cultures.

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29581.

Author : Byndiu, C., Rubtsov, St.
Inst : Not given.
Title : Root Formation Methods in Oak Cuttings. (O sposobakh okoreneniya cherenkov duba (Rumyniya).

Orig Pub: Rev. padurilor, 1956, 71, No 7, 427-429.

Abstract: No abstract.

Card 1/1

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, T., inzh.

We build engines for racing motorboats. Za rul. 19 no.12:22-23 D '61. (MIRA 14:12)

1. Chlen vodno-motornoy sektsii sportkluba "Traktor", Volgograd.
(Motorboats--Gasoline engines)

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.A., inzh.

Improved design of the valve for the testing of apparatus.
Khim.mashinostr. no.2:39 Mr-Ap '64. (MIRA 17:4)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

PIRUMOV, U.G. (Moskva); RUBTSOV, V.A. (Moskva)

Design of axisymmetrical supersonic annular nozzles. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6:15-25 N-D '61. (MIRA 14:11)

(Supersonic nozzles)

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L 06710-67 EWT(d)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c) JD

ACC NR AP6018715 (A) SOURCE CODE: UR/0193/66/000/004/0012/0013

AUTHOR: Rubtsov, V. A.; Sharovatov, S. I.

ORG: none

TITLE: The UGER-500-2 unit for gas-electric cutting of metals

SOURCE: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 4, 1966, 12-13

TOPIC TAGS: metal cutting, gas cutting, electric arc, argon, hydrogen, CUTTING TOOL / UGER-500-2 CUTTING TOOL

ABSTRACT: The UGER-500-2 unit was designed for gas-electric cutting of non-finished products made of nonferrous metal, nonferrous alloy, and stainless steel not exceeding 150 mm in thickness. The unit consists of a welding source, a control cabinet, a profiling machine, an arc-shaped welding head, and auxiliary resistance. The welding head is manipulated with the aid of a remodeled SGU-1-60 gas-cutting machine tool and the cutting is effected by a high-power electric arc compressed by gas in the welding head. The welding source consists of a three-phase power transformer, a choke, and a rectifier. The control cabinet contains a gas feeding unit, and oscillator, and a control box. The arc-shaped welding head is equipped with a tungsten electrode 6 mm in diameter and two removable nozzles made of either bronze or copper. The inner nozzle is fed argon and hydrogen and the outer nozzle is supplied with

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ACC NR: AP6018715

compressed air in lieu of argon for arc compression purposes. The UGER-500-2 unit is fed by an a-c current of 380 v. The specifications of this unit are: power - 195 kva, voltage at no-load conditions - 300 v, rated current - 500 a, argon consumption - 0.65 m^3/hr, and hydrogen consumption - 2 m^3/hr. Installed at the Tambov Chemical Machinery Plant (Tambovskiy zavod khimicheskogo mashinostroyeniya) the unit made it possible to do away with 5 drill presses serviced by 15 employees, to reduce the metal margin for machining purposes to half the former size, and to save about 23,000 rubles annually. The substitution of argon by nitrogen also effects considerable savings.

SUB CODE: 13/ SUBM DATE: none

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 65288-65 (A)

ACCESSION NR: AP5020381 UR/0354/65/000/008/0058/0061
634.0.383.7

AUTHORS: Shchekotin, Ye. A. (Candidate of technical sciences); Rubtsov, V. G. (Candidate of agricultural sciences); Zakharov, V. A. (Engineer of design)

TITLE: New ditch digging machine KLK-1000

SOURCE: Lesnoye khozyaystvo, no. 8, 1965, 58-61

TOPIC TAGS: excavating machinery, forest machinery, forest plow/ KLK 1000 ditch digger, S 100B tractor, E 352 excavator

ABSTRACT: To eliminate some of the shortcomings of existing ditch digging machines, a new cable-winch type of ditch digging machine (KLK-1000) was developed at LenNIILKh (see Fig. 1 on the Enclosure). The ditch digger is mated with

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L 65288-65
ACCESSION NR: AP5020381

terrains and performed very well even in areas containing stumps up to 24 cm in diameter and boulders of up to 2 tons. Capacity was found to be 200 m/hr in unwooded areas and ≈ 150 m/hr in wooded swamps, with an average total digging

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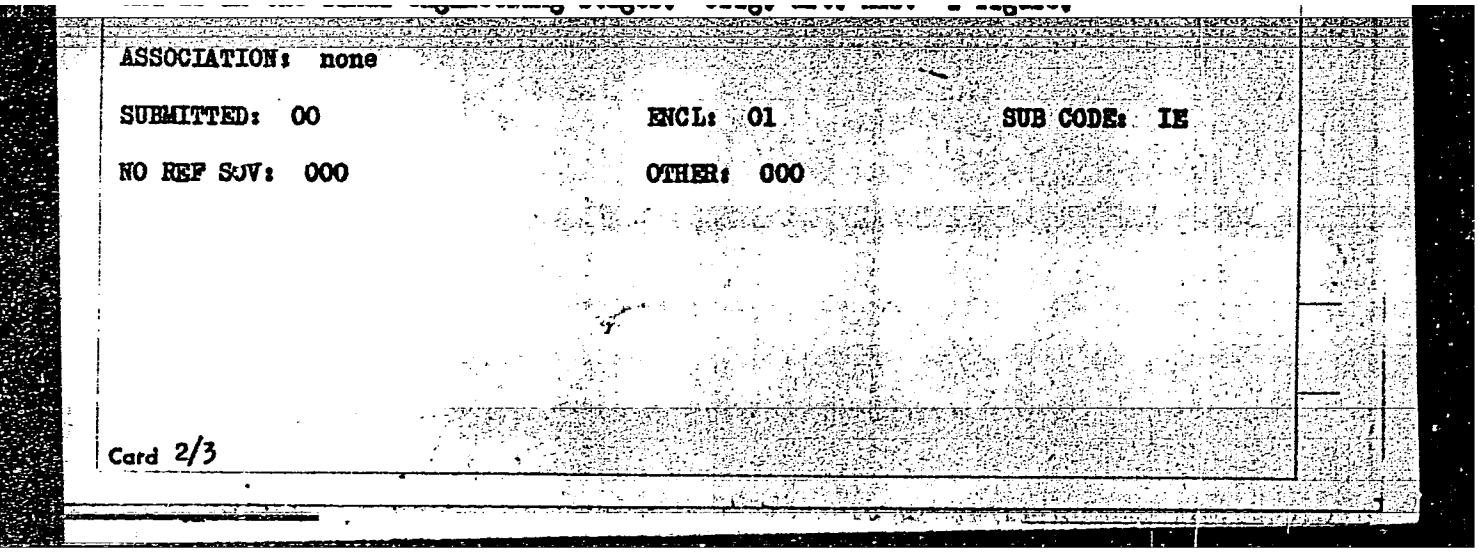

ASSOCIATION: none

SUBMITTED: 00 ENCL: 01 SUB CODE: IE

NO REF SOV: 000 OTHER: 000

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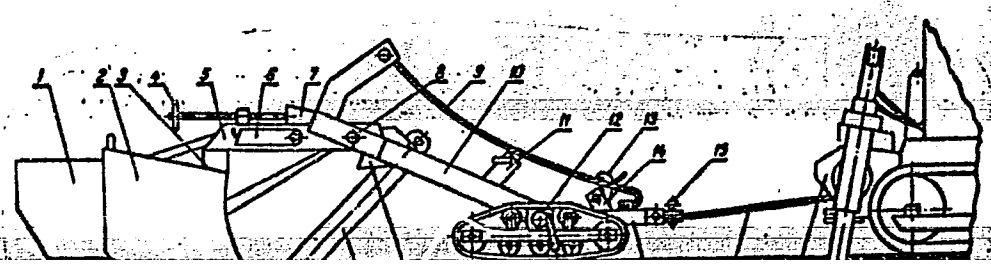
"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 65288-65

ACCESSION NR: AP5020381 ENCLOSURE: 01



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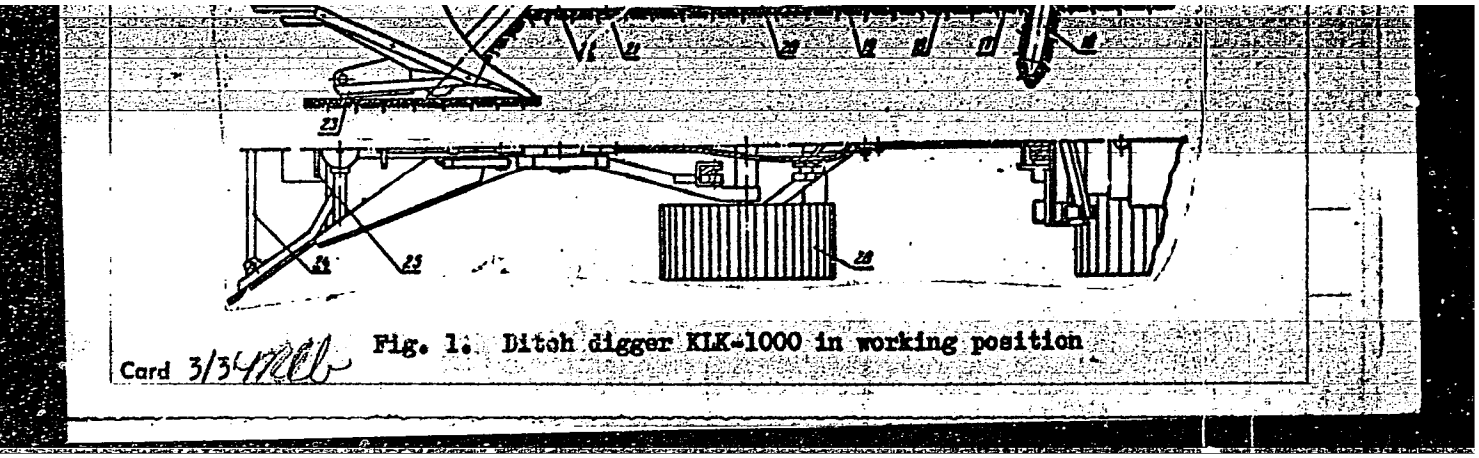

Fig. 1. Ditch digger KIK-1000 in working position

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

SHIPILOV, V.S., kand. veter. nauk, dotsent; RUBTSOV, V.I., veter. vrach

Physiologically based methods and time for treating the retention of placenta in cows. Izv. TSKHA no.1:67-70 '63. (MIRA 16:7)

(Placenta) (Cows--Diseases and pests)
(Veterinary obstetrics)

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 6955-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP5026228 SOURCE CODE: UR/0048/65/029/010/1859/1861

AUTHOR: Rubtsov, V.I.

ORG: Physics Institute im. P.N.Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Preliminary data on the number of electrons and gamma rays with energies exceeding 3 BeV in the primary cosmic radiation /Report, All-Union Conference on Cosmic Ray Physics held at Apatity, 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no. 10, 1965,1859-1861

TOPIC TAGS: Primary cosmic ray, electron, gamma ray, scintillation counter, stratosphere

ABSTRACT: This paper reports preliminary results of stratosphere flights undertaken to detect and measure the electron and gamma ray components of the primary cosmic radiation. The apparatus consisted of three 30 cm diameter 25 cm thick plastic scintillators mounted in line, separated by lead sheets, and surrounded by Geiger counters. Coincidences between the last two scintillators were counted and were separated into three classes according to the amplitude of the pulse in the first scintillator. Altitude versus counting rate curves are given for those double coincidences for which the pulse in the first scintillator corresponded to passage

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ACC NR: AP5-26228

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of less than 0.1, less than 3, and more than 3 relativistic particles. These curves are discussed in detail and it is concluded that if there are primary electrons and gamma rays with energies exceeding 3 BeV, their fluxes are less than 2% and 0.3%, respectively, of the primary proton flux. The author thanks S.N.Vernov for suggesting the investigation, Ye.I.Pobedonostsev for organizing the stratosphere flights, and Yu.A.Smorodin and A.N.Charakhch'yan for discussing the results. Orig.art. has: 2 figures and 3 tables.

SUB CODE: AA SUBM DATE: 00/--Oct65 ORIG.REF: 001 OTH REF:000

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.I.

VORONIN, I.V., dotsent; KAPPER, O.G., professor; NAUMENKO, I.M., professor, OSTROVSKIY, P.Ya., dotsent; RUBTSOV, V.I., dotsent.

Some observations on "Trudy Instituta lesa." Vest. AN SSSR 24 no.8:123-129 Ag '54. (MIRA 7:9)

1. Nauchnyye rabotniki Voronezhskogo lesotekhnicheskogo instituta (avtory retsenzii).
(Forests and forestry--Periodicals)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.I.

Result of concentrated plantings of pine in a plot. Bot.zhur. 39 no.3:394-402 My-Je '54. (MLRA 7:7)

1. Voronezhskiy lesotekhnicheskiy institut.
(Pine)

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

K-2

USSR/Forestry - Biology and Typology of the Forest.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39066

Author : Rubtsov, V.I., Il'in, A.M.

Inst : Voronezh Silvicultural Institute.

Title : Contribution to the Problem of the Influence of Precipitation and Air Temperature on the Growth of the Pine-Tree.

Orig Pub : Nauchn. zap. Voronezhsk, lesotekhn. in-ta, 1956, 15, 57-62.

Abstract : It was established by studies during the year 1952 in the pine-tree forest of the left-shore forestry administration of the Training-Experimental leskhoz of the All-Union Silvicultural Institute (Voronezh) that the influence of the air-temperature on the pine-tree growth depends almost exclusively on conditions of moisture security. The increase in height of the pine-tree in the first

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

K

USSR / Forestry. Forest Cultures.

Abs Jour : Ref Zhur - Biologiya, No 18, 1958, No. 82220

Author : Rubtsov, V. I.
Inst : Leningrad Forest Technology Academy
Title : Forest Cultures and Reclamation of the Inferior Stands in Forests of the Central Chernozem Oblasts

Orig Pub : Tr. Leningr. lesotekhn. akad., 1957, vyp 81, ch. 3, 23-27

Abstract : An analysis is made of the possible extension of the forest-covered area, while the principal means are recognized as afforestation of unrenewed cleared areas, glades, and sand pits, as well as replacement of inferior non-productive plantations (thinned, poorly canopied tree stands of all species and temporal stand types made up of soft-wood deciduous species in highly productive soils of damp birch woods, oak and damp oak

Card 1/2

Biologiya, No 18, 1958, No. 82220

woods) by means of forest cultures. A reliable method of replacing inferior stands is [illegible] and subsequently cultivating the surfaces with valuable species. The merit and deficiencies of the forest culture practices of local leskhozes are described, and recommendations are given for making the methods and techniques of producing these cultures more efficient.
-- D. A. Tarasov

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

3-58-3-17/32

AUTHOR: Rubtsov, V.I., Dotsent, Director of the Voronezh Forestry Engineering Institute

TITLE: It is Necessary to Disburden the Correspondence Students (Neobkhodimo razgruzit' zaochnikov)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, Nr 3, pp 65 - 66 (USSR)

ABSTRACT: The curricula of correspondence courses are overloaded in many specialties. They provide 280 hours of obligatory exercises for the correspondence students during each laboratory session, in addition to 5-8 tests and a similar number of examinations. Thus, the students must work daily at least 15 hours during the session period. The Metodicheskoye upravleniye Ministerstvo vysshego obrazovaniya SSSR (The Methodical Administration of the USSR Ministry of Higher Education) has proposed a number of measures to improve instruction by correspondence, and to disburden the students of superfluous work. This requires a thorough revision of the curricula and a general basis for these plans. The article enumerates the measures to be adopted.

ASSOCIATION: Voronezhskiy Lesotekhnicheskiy institut (Voronezh Forestry Engineering Institute)

AVAILABLE: Library of Congress

Card 1/1

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.I., kand. sel'khoz. nauk, otv. red.; NAUMENKO, I.M., prof., doktor sel'khoz. nauk, red.; KAPPER, O.G., prof., red.; KHUKHRYANSKIY, P.N., prof., doktor tekhn. nauk, red.; RASKATOV, P.B., dots., kand. biol. nauk, red.; POLOZHENTSEV, P.A., prof., doktor sel'khoz. nauk, red.; VOROTNIKOVA, R.V., red.; SERADZSKAYA, P.G., tekhn. red.

[Collection of student scientific papers] Sbornik studencheskikh nauchnykh rabot. Pod red. V.I. Rubtsova i dr. Voronezh, Voronezhskoe knizhnoe izd-vo, 1959. 68 p. (MIRA 16:8)

1. Voronezh. Lesotekhnicheskiy institut. 2. Direktor Voronezhskogo lesotekhnicheskogo instituta (for Rubtsov).
(Forestry research)

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 20979-66 EWT(1)/T JK
ACCESSION NR: AP5011287 UR/0016/65/000/004/0116/0121

AUTHOR: Kraskina, N. A.; Alliluyev, A. P.; Rubtsov, I. V.; Modyayeva, N. S.

TITLE: Passive hemagglutination reaction with chemical preparations of O- and Vi-antigens of S. typhi in diagnosis of typhoid fever and the carrier state

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 4, 1965, 116-121

TOPIC TAGS: man, typhoid fever, blood serum, bacterial antigen, S. typhi, hemagglutination, agglutination

ABSTRACT: The higher sensitivity of the passive hemagglutination reaction compared to the agglutination reaction (Widal's test) in identifying typhoid fever and carrier state was shown in a series of experiments. Chemically purified O- and Vi- S. typhi antigens were used for erythrocyte sensitization in the hemagglutination reaction. The O-antibody and Vi-antibody titer levels of blood sera served as indices. In testing the blood sera of 40 typhoid fever carriers,

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L 20979-65

ACCESSION NR: AP5011287

Vi-antibody titers of 1:40 and higher were established in 90% of the sera by hemagglutination reaction, and in only 20% of the sera by agglutination reaction. In 397 cases of typhoid fever, the diagnosis was confirmed in 87% of the cases by hemagglutination reaction, and in only 69% of the cases by agglutination reaction. The O-antibody titer level of the hemagglutination reaction was generally about 6 times higher than that of the agglutination reaction. With high sensitivity and specificity of the hemagglutination reaction confirmed, this method is recommended as a technique for diagnosing typhoid fever and carrier state. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Moskovskiy institut epidemiologii i mikrobiologii i I Moskovskiy ordena Lenina meditsinskiy institut (Moscow Institute of Epidemiology and Microbiology and First Moscow Lenin Order Medical Institute)

SUBMITTED: 14Apr64 ENCL: 00 SUB CODE: LS

NR REF SOV: 003 OTHER: 004

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APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.I.

Preliminary data on the number of electrons and gamma quanta in primary cosmic radiation with energies above or equal to 3 Bev. Izv. AN SSSR.Ser.fiz. 29 no.10:1859-1861 O '65. (MIRA 18:10)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

3, 24.10 (2205, 2705, 2805)

S/048/62/026/005/004/022
B108/B104

AUTHORS: Baradzey, L. T., Rubtsov, V. I., Smorodin, Yu. A., Solov'yev, M. V., and Tolkachev, B. V.

TITLE: Formation of an electron-photon component in the interaction of particles of 10^{12}-10^{14} ev with light nuclei in the atmosphere

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 5, 1962, 575-584

TEXT: With the aid of ionization chambers with an area of 0.2 m^2, the authors obtained data on: (1) the energy spectra of electron-photon avalanches falling upon the apparatus from the air at pressures of 200, 300, and 1030 g/cm^2; (2) the energy spectra of cascades induced by nuclear-active particles in the graphite block above the apparatus at pressures of 200 and 300 g/cm^2; (3) the air showers accompanying the particles. The particle densities in the showers were determined immediately at the

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Formation of an electron-photon...

apparatus and 10 m away from it. The major part of photons is produced by particles of an energy exceeding the photon energy by one order of magnitude. The photon spectra at high energies (above $2\text{-}4\cdot10^{12}$ ev) differ considerably from those obtained at low energies. This is probably due to increased energy dissipation by new secondary radiation processes. The absorption path of nuclear-active particles in the atmosphere can be determined from the absorption path of the component producing the electromagnetic cascade in the light substance, or from the absorption path of the component producing high-energy photons in the atmosphere. The coefficient of inelasticity of nucleon interaction remains unchanged over a wide range of energies. The intensity of primary cosmic radiation in the energy range $2\cdot10^{11}$-$2\cdot10^{13}$ ev is

$$N(>E) = (600 \pm 150)(E/10^{12})^{-1.7 \pm 0.15}\ \text{hr}^{-1}\text{m}^{-2}\text{sterad}^{-1}.$$

This spectrum is consistent with results of more accurate calculations. There are 9 figures and 3 tables.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR); Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gos. universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics of the Moscow State University imeni M. V. Lomonosov)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.K., kand. tekhn. nauk

Determining the hardness of rocks in the field. Ugol' 40 no.4:40-41 Ap '65. (MIRA 18:5)

1. TSentral'nyy nauchno-issledovatel'skiy gornorazvedochnyy institut tsvetnykh, redkikh i blagorodnykh metallov, Moskva.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.K. (Moskva)

Theoretical and experimental investigation of a gear transmission with wave motion. Mashinovedenie no.2:54-63 '65.

(MIRA 18:8)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

S/139/62/000/001/001/032
E032/E114

24,7100

AUTHORS: Zhdanov, V.A., and Rubtsov, V.M.

TITLE: On the dynamics of crystal lattices with finite interacting atoms

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.1, 1962, 3-9

TEXT: It is pointed out that classical models of a solid, in which the atoms at the lattice sit s are assumed to have negligible dimensions, are insufficient to describe the properties of valence crystals in which the mutual orientation of the constituent atoms is important. Attempts to take into account the finite size of the atoms and the associated effects are said to have been equivalent to the introduction of certain 'additional' degrees of freedom for each atom, describing the polarisation, orientation, and so on, of the atoms. In the present paper the fact that the atoms are not point objects is allowed for by assuming that translational and rotational displacements from the equilibrium position give rise to a change in the potential energy of each atom. The interaction matrix is

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derived on the harmonic approximation and its properties are discussed. The equations of motion of a finite-atom lattice are then examined and general expressions are obtained for the vibrational spectrum of a lattice with nearest-neighbour interactions. It is shown that this does not lead to a change in the limiting frequencies as compared with the point-atom model. It is expected that when second neighbours are allowed for, a different limiting frequency will be obtained. However, the problem involves the solution of a set of two matrix equations which lead to a complicated secular equation. This makes it difficult to derive any further specific predictions. The paper is entirely mathematical; no numerical calculations are reported.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Physicotechnical Institute at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: October 6, 1960

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 19676-63 EWT(l)/EWP(q)/EWT(m)/EWP(B)/BDS AFFTC/ASD/ESD-3/IJP(C) JD

ACCESSION NR: AR3006977 S/0058/63/000/008/E030/E030

SOURCE: RZh. Fizika, Abs. 8E205

AUTHOR: Rubtsov, V. M.

TITLE: Contribution to the theory of oscillation of crystal lattices with account of the internal degree of freedom of the particles

CITED SOURCE: Tr. Stalinskogo gos. ped. in-ta, v. 3, no. 4, 1960, 75-82

TOPIC TAGS: Crystal structure, particle freedom degree, lattice vibration

TRANSLATION: Some questions are considered in the theory of small oscillations of crystal particles for the case when the forces acting on the particles are due not only to translational but also to rotational motion. The equations of motion of the particles in the

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 19676-63

ACCESSION NR: AR3006977

lattice, are expressed in terms of the potential energy coupling matrices. The solutions of these equations give the translational and orientational displacements of the particles. A. Kikoin.

DATE ACQ: 06Sep63 SUB CODE: PH ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

L 19678-63 EWT(l)/EWP(q)/EWT(m)/EWP(B)/BDS . AFFTC/ASD/ESD-3/IJP(C) JD

ACCESSION NR: AR3006975 s/0058/63/000/008/E022/E022

SOURCE: RZh. Fizika, Abs. 8E150

AUTHOR: Rubtsov, V. M.

TITLE: Translation-orientation waves in a quadratic lattice

CITED SOURCE: Tr. Novokuznetskogo gos. ped. in-ta, v. 4, 1962, 135-142

TOPIC TAGS: lattice vibration, rotational freedom degree, translation-orientation wave , quadratic lattice

TRANSLATION: The theory previously developed by the author (RZhFiz, 1962, 10E14) for the lattice vibrations, with allowance for the rotational degrees of freedom of the particles, is applied to the case of a flat quadratic lattice. Only nearest-neighbor interaction is considered. The coupling matrices are used to construct the dynamic

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L 19678-63

ACCESSION NR: AR3006975

matrix and the secular equation from which the dispersion relations are determined. The vibrations of the centers of the particles normal to the plane of the lattice cause them to "rock" about axes parallel to the plane of the lattice, and the vibrations of the centers in the plane of the lattice cause periodic changes in the orientations of the particles in the same plane. The dispersion relations are determined for one special model, in which the lattice consists of absolutely rigid four-atom molecules, the nearest atoms of which interact in the usual pointlike manner. The frequencies of the longitudinal oscillations turn out to be the same as in ordinary point theory. Passage of transverse vibrations excites orientational oscillations. The symmetrical directions of the wave vector, namely along the side of the square and along its diagonal, are investigated. V. Oskotskiy.

DATE ACQ: 06Sep63 SUB CODE: PH ENCL: 00

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APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

S/139/62/000/001/011/032
E032/E114

24,7100

AUTHOR: Rubtsov, V.M.

TITLE: The dynamics of a simple cubic lattice with finite interacting atoms

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.1, 1962, 72-79

TEXT: In a previous paper the author and V.A. Zhdanov discussed the dynamics of a crystal lattice with finite interacting atoms. In the present paper the general theory is applied to the vibrations of a simple cubic lattice. Explicit formulas are derived for the frequencies and amplitudes of lattice vibrations for the (100), (110) and (111) directions. Expressions are also obtained for the elastic moduli in terms of the coupling parameters. The paper is entirely theoretical; no numerical calculations are reported.
There is 1 table.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

The dynamics of a simple cubic ... S/139/62/000/001/011/032
E032/E114

1/B

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Physicotechnical Institute at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: October 6, 1960

Card 2/2

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

AUTHOR: Yatmanov, A.; Yevteyev, P.; Rubtsov, V. SOV-107-58-4-21/57

TITLE: When Will There Be Radio Parts? (Kogda zhe budut radiodetali?)

PERIODICAL: Radio, 1958, Nr 4, pp 14-15 (USSR)

ABSTRACT: The article contains correspondence from radio amateurs in various parts of the Soviet Union, complaining of the lack of radio components or materials for making these components. There are 2 drawings.

1. Radio equipment--Availability 2. Radio equipment--Maintenance
3. Radio operators--Amateurs

Card 1/1

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

ROBITSOV, V., SUDNITSKIY, L.

Television

Sweep generators for televisor with electrostatic tube. Radio no. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

"Scanning Oscillators for Kinescopes with Electrostatic Deflection," V. Rubtsov, L. Pozdnyakov

Radio, No 3, pp 40-42

Describes a circuit consisting of one 6N8S twin triode tube which generates a symmetrical sawtooth voltage for line and frame scanning of picture tubes with electrostatic deflection. The circuit is simple, highly stable, and gives a good raster. Although the 6N8S cathode is at a high ac potential, equal to half the deflecting voltage, no breakdown was observed between cathode and filament.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

33554
S/179/61/000/006/003/011
E031/E514

26.2161

AUTHORS: Pirumov, U.G. and Rubtsov, V.A. (Moscow)

TITLE: Design of axially symmetric supersonic annular nozzles

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.6, 1961, 15-25

TEXT: This paper describes work begun in January, 1960 on the analysis of several types of axially symmetric supersonic flow in annular nozzles with two angular points and a rectilinear sonic line. The first case to be considered is where the points lie in the same plane. A description is given of the method of calculation which was carried out at the VTs MGU on a "Strela" electronic computer. Considering the flow in detail, it is seen that for small values of h/r_* (h is the width of the critical section, r_* is the radial distance of the upper angular point) the outflow from the annular opening is nearly the same as that from a plane opening with a rectilinear sonic line. Assuming then that the flow is two-dimensional, it is possible, knowing the flow parameters and the geometrical dimensions of the characteristics of the expansion wave

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for an annular nozzle of a given critical section, to calculate the expansion wave for an annular nozzle of a different critical section. It may be shown that the asymptotic behaviour of the flow parameters corresponds to the flow due to some equivalent source whose intensity varies from one streamline to another. An expression is given for calculating the dimensions of the annular opening for given r_o (radial distance of the centre line of the critical section) as a function of the Mach number. It follows from this expression that, for given dimensions of the critical section, there is only one Mach number for which a uniform characteristic (i.e. a straight characteristic with uniform flow parallel to the axis) drawn from some point on the wall reaches the axis. It is shown that the use of an annular nozzle with two angular points in the same plane and having a uniform and parallel flow at its outlet enables the length of the central pipe to be shortened by a factor of not less than $\sqrt{2}$ in comparison with an ordinary axially symmetric nozzle with one angular point. From an analysis of the flow in an annular nozzle, an approximate method for solving Gurs's problem of calculating the gas parameters in an

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annular nozzle may be derived. The method is based on the assumption that all the characteristics of the first family for the upper half of the pipe and all the characteristics of the second family for the lower half of the pipe are straight lines with constant velocity vectors. Calculations for the case when the angular points are displaced relative to each other are also described. The same approximate method can be used. There are 8 figures, 1 table and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference reads as follows:
Ref.2: Shapiro A. The dynamics and thermodynamics of the compressible fluid flow. N.Y., 1953.

SUBMITTED: July 8, 1961

Card 3/3

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

KUG 1 30 V2 V.H.

GOFMAN, A.B., inzhener; RUBTSOV, V.A., master.

Manually operated diaphragm pump for pumping gasoline. Stroi. pred.neft.prom. 1 no.8:14-15 O '56. (MLRA 9:12)

1. Montazhnoye upravleniye no.10 tresta Neftezavodmontazh, g. Oktyabr'skiy.
(Pumping machinery)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V. A., Cand Tech Sci (diss) -- "Investigation and selection of the type of reinforcement for principal horizontal cuts through soft soil in the fine-pyrite mines of the Urals". Sverdlovsk, 1959. 17 pp (Min Higher Educ USSR, Sverdlovsk Mining Inst im V. V. Vakhrushev), 110 copies (KL, No 9, 1960, 125)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

AUTHOR: Rubtsov, V. A. (Moscow) SOV/103-19-10-4/12

TITLE: On the Problem of the Equivalence of Pulse and of Continuous Control Systems (K voprosu ob ekvivalentnosti sistem preryvistogo i nepreryvnogo regulirovaniya)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 10, pp 945-952 (USSR)

ABSTRACT: This paper gives a demonstration of the fact that essential differences can be found between self-operated two-position and proportional control systems. This is true with respect to transient processes and to steady-state conditions. Firstly some theorems are advanced which give the sufficient conditions for determining the equivalence of the two types of control systems. This condition $|q_\nu| = |T_n p_\nu| \ll 1$ (4) is proved to be a necessary, but not a sufficient condition for the equivalence of such systems. In this equation, T_n denotes the period of the repetition of the pulse signals, p_ν singular poles of the transfer function of the linear part of the control system with pulsed feedback, and $q_\nu = T_n p_\nu$, q_ν the

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On the Problem of the Equivalence of Pulse and of Continuous Control Systems

"small" poles. In order to be able to decide upon the equivalence of the systems with respect to transient processes it is necessary that apart from the condition (4) the sufficient conditions (21) must be satisfied. An investigation of the stability of self-operated systems of two-position control is in the general case not permissible. Such an investigation is only possible for a special class of self-operated systems which satisfy the sufficient conditions (21) even if $A = A_{\infty}$, where A denotes the feedback coefficient. There are 2 figures and 5 references, which are Soviet.

SUBMITTED: December 31, 1957

Card 2/2

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

KOLCHIN, Ye.M., inzh.; RUBTSOV, V.A., kand. tekhn. nauk

Testing various designs of rod bolting. Shakht. stroi. 7 no.8:17-18 Ag '63. (MIRA 16:11)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut mednoy promyshlennosti.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

ACCESSION NR: AT4006706 S/3043/63/000/002/0048/0060

AUTHOR: Pirumov, U. G.; Rubtsov, V. A.; Suvorova, V. N.

TITLE: Design of axisymmetric nozzles taking into account equilibrium physico-chemical transformations

SOURCE: Moscow. Universitet. Vy*chislitel'ny*y tsentr. Sbornik rabot, no. 2, 1963. Chislenny*ye metody* v gazovoy dinamike, 48-60

TOPIC TAGS: axisymmetric nozzle design, equilibrium gas flow, method of characteristics, isentropic gas flow, nozzle flow friction, friction factor, isentropic ideal gas, axisymmetric flow, nozzle flow

ABSTRACT: Problems relating to the flow of various gases in a nozzle of given design and to the effects of the physical properties of a gas on the coefficient of impulse loss in a nozzle were studied at the Vy*chislitel'ny*y tsentr MGU (Computer Center of Moscow State University). The calculations involved streamlined flow of gas through a nozzle of given contour and designs of nozzles with a uniform and parallel flow at the nozzle exit. Effects of viscosity and heat transmission were ignored. The study involved axisymmetric nozzles with an apex point (see Fig. 1 in the Enclosure). The method of characteristics was used for the calculations. The adiabatic line indicator K was 1.207 for the selected

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

ACCESSION NR: AT4006706

composition of gas, designated "composition I". Dependence of pressure on density along the line of constant entropy, $p = p(\rho)$, is illustrated for that composition (see Fig. 2 in the Enclosure). Flows were calculated for two nozzles. Design No. 1 was calculated for an ideal gas with $K = 1.14$, using approximated formulas. Design No. 2 was subjected to accurate calculations, using the method of characteristics, and involved a uniform and parallel flow at nozzle exit for an ideal gas with $K = 1.25$. The flow of a real gas with composition I was calculated for both nozzles. Also, the flow of ideal gases (K values of 1.114, 1.14, 1.185 and 1.33) was calculated for nozzle No. 1 and (K values of 1.14, 1.25, 1.33 and 1.4) for nozzle No. 2. Results are presented graphically (see Figs. 3, 4, 5, 6, 7 and 8 in the Enclosure). Orig. art. has: 8 graphs.

ASSOCIATION: VY*CHISLITEL'NY*Y TSENTR MGU (Computer center, Moscow State University)

SUBMITTED: 00 DATE ACQ: 16Dec63 ENCL: 07

SUB CODE: AI NO REF SOV: 008 OTHER: 002

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APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.A.; SERGEYEV, V.I.; LUKANOVA, M.V.; KRASIL'NIKOV, A.I.; KRYUKOVA, V.N.; BALYUTINA, O.I.

Handbook on flax spinning. Reviewed by V.A.Rubtsov and others. Tekst.prom. 18 no.10:63-65 O '58. (MIRA 11:11)

1. Zaveduyushchaya tekhnicheskoy bibliotekoy Orshanskogo l'no-kombinata (for Balyutina).
(Flax)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.A. (Moscow)

Equivalence of discontinuous and continuous control systems [with summary in English]. Avtom. i telem. 19 no.10:945-952 O '58. (MIRA 11:11)

(Automatic control)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.A., gornyy inzhener

Using stone made of metallurgical slag as mine props. Gor.zhur. no.8:36-46 Ag '55. (MLRA 8:8)
(Mine timbering) (Stone, Artificial)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.F.

Protection of wearable components of pneumatic chaff conveying systems. Obm. opyt. [MLP] no.4:38-39 '56. (MIRA 11:10)
(Pneumatic machinery--Maintenance and repair)
(Conveying machinery--Maintenance and repair)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

ZABOROVSKIY, Yevgeniy Pavlovich; LISIN, Serafim Sergeyevich; SOBOLEV, Sergey Stepanovich. Prinimali uchastiye: VERESIN, M.M.; RUBTSOV, V.G.; OBNOVLENSKIY, V.M., prof., retsenzent; SHARAPOV, A.N., inzh.-lesovod, retsenzent

[Forest plantations and forest drainage] Lesnye kul'tury i lesnye melioratsii. Moskva, Izd-vo "Lrsnaia promyshlennost'," 1964. 391 p. (MIRA 17:5)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.G. (Leningrad)

Environmental factors affecting the germination of pine seeds and the development of seedlings in sphagnous pine-woods as related to drainage. Bot.zhur. 45 no.6:896-900 Je '60. (MIRA 13:7)
(Afforestation) (Pine) (Mosses)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.G.

Drainage as a measure for assuring forest regeneration. Trudy Inst. lesa 49:124-128 '59. (MIRA 13:2)

1.Leningradskiy nauchno-issledovatel'skiy institut lesnogo khozyaystva.
(Reforestation) (Drainage)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V. G.

RUBTSOV, V. G.: "The effect of drought on afforestation under sphagnum forest conditions". Leningrad, 1955. Min Higher Education USSR. Leningrad Order of Lenin Forestry Engineering Academy imeni S. M. Kirov. (Dissertations for the Degree of Candidate of Agricultural Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.I.; FREYMAN, L.S. (Voronezh).

Higher level of mathematical training of those who graduate from schools. Mat.v shkole no.2:32-36 Mr-Ap '54. (MLRA 7:3)
(Mathematics--Study and teaching)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

Rubtsov, V. I.

4213
INTERACTION OF COSMIC RAY PROTONS WITH LIGHT NUCLEI ACCORDING TO MEASUREMENTS TAKEN WITH WILSON CHAMBER AT 9 KM ALTITUDE. L. T. Baradzei, Y. I. Rulisov, Yu. A. Smorodin, M. V. Solov'ev, B. V. Tolkachev, and Z. I. Tulinova. (Lebedev Inst. of Physics). Izvest. Akad. Nauk S.S.S.R. Ser. Fiz. 19, 502-7(1955) Sept.-Oct. (In Russian)

The investigation of cosmic proton interaction with nuclei at high altitudes was facilitated by the high intensity of protons and negligible content of π mesons in the nuclear active component. The measurements of proton interactions with beryllium nuclei Be^9 were made with a Wilson chamber of ϕ 200 mm and illumination depth of 500 mm. The chamber was working in a magnetic field with strength of 9000 Oe. A beryllium plate of 5.3 g/cm^2 was placed in the chamber for measuring the space angles between the shower particles and the primary particle traces over the plate. The measurement error for the space angles was within 1°. The particle angular distribution in the showers and the data on impulses are given. (R.V.J.)

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RUBTSOV, V. I.

ABSORPTION OF NUCLEONS WITH ENERGIES FROM 10^{11} To 10^{13} ev IN AIR
A.T. Baradze, V.I. Rubtsov, Yu.A. Smorodin, M.V. Solovyev, B.V. Tolkachev

1. Nucleons in the energy range from 10^{11} to 10^{13} ev were studied at altitudes correspinding to pressures of 300 gms/cm^2 and 200 gms/cm^2.

The instrument used made it impossible to record ionization bursts due to the multiplication in lead of the electron-photon component generated by the interaction of high energy particles with carbon nuclei. 2 trays of cylindircal ionization chambers were placed under 4 and 8 rad.units of lead. respectively. The magnitude of the ionization burst in each chamber was recorded. Hodoscope counter set at distances from 0 to 10 m enabled us to detect air showers.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

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L 24662-65 EWT(m)/ DIAAP

ACCESSION NR: AT4049957 S/2504/64/026/000/0224/0248

23
24
B+1

AUTHOR: Baradzey, L.T.; Rubtsov, V.I.; Smorodin, Yu. A.; Solov'yen, M.V.; Tolkachev, B.V.

19

TITLE: Passage of high-energy nucleons through the atmosphere and the formation of mesons

SOURCE: AN SSSR. Fizicheskiy institut. Trudy*, v. 26, 1964. Kosmicheskiye luchi (Cosmic rays), 224-248

TOPIC TAGS: cascade multiplication, pion, nucleon, meson, avalanche, muon, gamma quantum, high energy particle

ABSTRACT: An analysis is made of recently collected data on the passage of 10^{12} - 10^{14} ev nucleons through the atmosphere. Energies of electron-photon cascade were measured with instruments which recorded ionization bursts resulting from an avalanche in a lead filter. The three instruments used are described. The energy spectra of nuclear cascades are discussed, taking into account shortening of the spectrum of primary nucleons in the form

$$N(>E) = 500(E)^{-1,7}[-0,15 + 2,75(E)^{-0,3} - 1,6(E)^{-0,4}] \text{ nucleon/hr.m}^2\text{.ster} \quad (1)$$

where the effective fraction of energy conversion is close to 0.5 and the fraction of energy

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transferred to the electronphoton component during interation with nuclei of the air Δ_{e-p} is such that

$$\int_0^1 \Delta_{\gamma\cdot\phi}^{1,7} / (\Delta_{e\cdot\phi})\, d\Delta_{\gamma\cdot\phi} = 0{,}08 \pm 0{,}02 = 0{,}22^{1,7}. \quad (2)$$

Data on the flux of nuclear-active cosmic-ray components at various atmosphere depths is summarized. Energy spectra of electron-photon avalanches incipient in the atmosphere and generation of γ-quanta are discussed. The formation of pions and pion fluxes in the atmosphere is treated. The fraction of energy carried by π^0 -mesons generated in the energy range below 10^{14} ev is expressed as

$$\int_0^0 \Delta_{\pi^0}^{1,7} / (\Delta_{\pi^0})\, d\Delta_{\pi_0} = 0{,}033 \pm 0{,}007 = 0{,}14^{1,7}. \quad (3)$$

Calculation of charged pion flux indicates that the generation of mesons of different sign may be expected at energies of about 10^{11} ev. It also indicates that in the 10^{11} - 2.10^{12} ev range pions make a significant contribution to nuclear-active components of the flux. About half of the nuclear cascades of a given energy and generated in thin filters are formed in the lower third of the atmosphere by π +-mesons. Muon flux at sea level calculated from data on atmospheric generation of γ-quanta coincides with experimental values in the 10^{11} -2.10^{12} ev range, indicating that the overwhelming fraction of muons in the atmosphere results from the decay of pions. "The authors

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ACCESSION NR: AT4049957

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thank S.N Vernov for his constant help, as well as R.A. Antonov for carrying out the godoscopic studies." Orig. art. has: 12 figures, 9 tables and 29 formulas.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA

NO REF SOV: 028 OTHER: 018

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V. I.

56-7-3/66

AUTHOR BARADZEY, L.T., RUBTSOV, V.I., SMORODIN, Yu.A., SOLOV'IEV, M.V., TOCHKAYEV, B.V., TULINOVA, Z.I.

TITLE On the Formation of the Electron-Photon-Component in the Interaction between Cosmic Ray Particles with Energies Exceeding to 10^{11} eV and Beryllium Nuclei
(Ob obrazovanii elektronno-fotonnoy komponenty pri vzaimodeystvii chastits kosmicheskikh luchey s energiyey vyshe 10^{11} eV s yadrami berilliya. Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 7, pp 17 - 2o (U.S.S.R.)

ABSTRACT The present paper describes the results of experiments carried out with a WILSON chamber which was fitted in a magnetic field. This WILSON cloud chamber operated for 52 hours in a height of 9oo m. Above this cloud chamber a beryllium block was located, in the interior of which a lead plate was fitted. On the occasion of the production of electron-photon showers in the absorbers the cloud chamber was photographed. 1l9o photographs were obtained and on 86 of them electronic-nuclear showers from the beryllium block were found recorded. Among them 5 electronic--nuclear showers were found in which more than lo parts were observed. l4 photographs of interactions are attached. The most important data on the showers investigated here are shown in a table. This table imparts

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On the Formation of the Electron-Photon-Component in the Interaction between Cosmic Ray Particles with Energies Exceeding to 10^{11} eV and Beryllium Nuclei

various informations as e.g. on the number of particles observed above the lead plate, on the number of particles identified as electrons, on the number of particles which have passed through the lead plate without cascade multiplication, on the maximum number of penetrating particles, on the point where the showers were formed, on the angle $\theta_{1/2}$ within which half of the particles is radiated, on the lower limit of the total energy of the penetrating particles, on the number of electrons below the lead plate with more than 6 and 3o eV, on the total energy of those electrons which were obtained by measuring the electron momenta below the plate, on the lower limit of the energy of the electron-photon components, on the energy of the electron-photon components produced on the occasion of the interaction, on the ratio between the energy of the electron-photon components and the energy of the impinging particle, and on the number of the secondary interactions observed in the lead plate. The data mentioned in this table show the following: On the occasion of the interaction of charged cosmic ray particles (10^{11} - 10^{12} eV) with light nuclei the energy transferred to the electron-photon component is subjected to important fluctuations and can drop down to some tenth of a percent.

Card 2/3 (With 4 illustrations and 1 table).

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56-7-3/66

On the Formation of the Electron-Photon-Component in the Interaction between Cosmic Ray Particles with Energies Exceeding to 10^{11} eV and Beryllium Nuclei

ASSOCIATION Physical Institute "P.N.Lebedev" of the Academy of Sciences of the U.S.S.R.
(Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR)

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SUBMITTED 6.2.1957
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BARADZEY, L. T., RUBTSOV, V. I., SOLOVYEV, M. V. and TOLKACHEV, B. V.

"Production of the Electron-Photon Component in the Interaction of Particles of Energies 10^{12} to 10^{14} ev with Light Nuclei in Atmosphere"

Report presented at the International Conference on Cosmic Rays and Earth Storm, 4-15 Sep 61, Kyoto, Japan.

P. N. Lebedev Physical Institute of the Academy of Science of the USSR and Nuclear Physics Research Institute of the Moscow University, USSR

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V. I. Veterinary Surgeon, Experimental Model-Farm of the Agricultural Academy imeni K. A. Timiryazev.

"An addition to the question concerning the surgical method of placenta removal in cows," Veterinariya, Vol. 37, No. 12, p. 54, 1960.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

Rubtsov, V.I.

BARADZEY, L.T.; RUBTSOV, V.I.; SMORODIN, Yu.A.; SOLOV'YEV, M.V.; TOLKACHEV, B.V.; TULINOVA, Z.I.

Formation of electron-photon components in the reaction between cosmic-ray particles with energies exceeding 10^{11} ev and beryllium nuclei [with summary in English]. Zhur. eksp. i teor. fiz. 33 no.1: 17-20 Jl '57. (MLRA 10:9)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Cosmic rays) (Nuclear reactions)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

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BARADZEY, L.T.; RUBTSOV, V.I.; SMORODIN, Yu.A.; SOLOV'YEV, M.V.; TOIKACHEV, B.V.; TULINOVA, Z.I.

Interaction of cosmic ray protons at about 10 Bev energies with Pb nuclei. Dokl. AN SSSR 115 no.4:685-688 Ag '57. (MIRA 10:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova i Fizicheskiy institut im. P.N. Lebedeva AN SSSR. Predstavleno akademikom D.V. Skobel'tsynym.
(Cosmic rays) (Collisions (Nuclear physics))

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

AUTHORS: Baradzey, L. T., Rubtsov V.I., Smorodin Yu.A. 1,20-4-14/60
Solov'yev M.V., Tolkachev B.V., Tulinova Z.I.,

TITLE: The Interaction of the Protons of Cosmic Rays With an Energy of About 1o BeV With Lead-Nuclei (Vzaimodeystviye protonov kosmicheskikh luchey s energiyey okolo $1o^{1o}$ eV s yadrami svintsa).

PERIODICAL: Doklady Akad.Nauk SSSR, 1957, Vol. 115, Nr 4, pp. 685-688 (USSR)

ABSTRACT: These investigations were performed in an altitude of 9ooo m by means of a cloud chamber in a magnetic field with 92oo oersteds. The scheme for the control mechanism of the chamber is illustrated by a sketch. In order to exclude the interactions caused by pions, the nuclear showers caused in the lead-plate by one individual charged particle were investigated. Altogether 38 of those case were selected, the characteristic photographs of the showers are given. The maximum measured impulse of the charged particles was 3 BeV/c. A table illustrates the distribution of the showers on the number n of particles in the shower. The average number of the particles per interaction is $3,9 \pm 0,3$. The experimental data yield some indications concerning the chief components of the electron-nucleus showers. A diagram illustrates the data of the energy distribution of the electrons. When this spectrum is described by a law of the type $dN/dE \sim E^{-\gamma}$, the exponent γ is variable. $\gamma \sim 1$ in the case of small energies and $\gamma \sim 2,5$ in the case of energies of

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~1 BeV). Other diagrams illustrate the energy distribution of the protons and mesons. The electrons with an energy of > 2 BeV spend about 16o MEV for the interaction. The summary energy of the electrons amounts to about 43o MeV per interaction. In the interactions examined here energy-rich particles are radiated which were hitherto not yet taken into consideration. The excess of particles with high energy can not be ascribed to the charged pions, but must come from protons. A proton with ~ 1o BeV loses on the average 2/3 to 1/2 of its energy in the interaction with a lead-nucleus. The charged and the neutral pions carry away about 1/3 of the energy of the inciding proton. The δ-particles carry with them about the same amount of energy. There are 3 figures, 1 table and 5 references, 3 of which are Slavic.

ASSOCIATION: Moscow State University imeni M.V.Lomonosov.Physical Institute AN USSR imeni P.N.Lebedev (Moskovskiy gos. universitet imeni M.V. Lomonosova, Fizicheskiy institut imeni P.N.Lebedeva AN SSSR).

PRESENTED: March 5, 1957 by D.V.Skobel'tsyn, Academician
SUBMITTED: December 21, 1956
AVAILABLE: Library of Congress.

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

BARADZEY, L.T.; RUBTSOV, V.I.; SMORODIN, Yu.A.; SOLOV'YEV, M.V.; TOLKACHEV, B.V.

Formation of the electron-photon component in the interaction of particles with an energy of 10^{12} - 10^{14} ev. with light nuclei in the atmosphere. Izv.AN SSSR.Ser.fiz. 26 no.5:575-584 Ap '62. (MIRA 15:5)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR i Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(Cosmic rays) (Photonuclear reactions)

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3.2410 (2705, 2805, 1559)

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S/627/60/002/000/013/027
D299/D304

AUTHORS: Baradzey, L. T., Rubtsov, V. I., Smorodin, Yu. A., Solov'yev, M. V. and Tolkachev, B. V.

TITLE: Absorption of high-energy nucleons in the atmosphere

SOURCE: International Conference on Cosmic Radiation. Moscow, 1959. Trudy. v. 2. Shirokiye atmosfernyye livni i kaskadnyye protsessy, 152-158

TEXT: The apparatus which was installed in an aircraft permitted studying large ionization bursts at various depths in the atmosphere: p = 200 gm/cm^2, p = 310 gm/cm^2, p = 1020 gm/cm^2. The apparatus incorporated ionization chambers and hodoscoped counters. The energy spectrum of the electron-photon component was obtained, for energies of $2 \cdot 10^{10}$ to $2 \cdot 10^{12}$ ev. It was found that in most cases the energy of the electron-photon component collimates well around the shower axis which lies in the area of the ionization chambers. A table shows the mean ionization-distribution in the chambers. The fast drop in energy density with distance from the shower axis

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Absorption of high-energy ...

shows that the recorded events are cascade showers of primary particles, namely gamma-quanta showers formed by the decay of π^0-mesons. The differential spectra of the electron-photon component show that for energies of $2 \cdot 10^{10}$ to $2 \cdot 10^{12}$ ev. the spectrum can be approximated by a power law with exponent $\tau = 2.75 \pm 0.07$ for all the altitudes under consideration. The electron energy spectrum for the one-dimensional problem was calculated in the approximation A which is sufficient for the small distances from the shower axis involved. The exponential change in atmospheric density was taken into account by means of Greisen's approximate method (Ref. 1: Fizika kosmicheskikh luchey (translation into Russian of "Progress in Cosmic Ray Physics", edited by J. G. Wilson), v. 3, chapt. 1, IL, 1958). The differential energy spectrum of the electron-photon component is

$$\frac{dN}{dE} = AE^{-\varepsilon} \int_0^\infty \alpha(t,E)^{\varepsilon-1} \left(1 - \frac{\partial \ln \alpha}{\partial \ln E}\right) e^{\frac{t}{\mu}} dt = AE^{-\varepsilon} C(E, P) \qquad (2)$$

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where C is the thickness of the effective layer for photon generation. Thereupon, the photon generation spectrum is obtained. The absorption length of the component which generates photons of energy 10^{11} to 10^{12} ev. is 120 gm/cm^2. Further, the energy of the nuclearactive particles is estimated which generate the photons. It was found that at pressures of 200 and 310 gm/cm^2, the electron density drops in accordance with the law $r^{-0.7 \pm 0.1}$, up to distances of 10 m from the ionization chambers. This table shows also the values of the energy of nuclearactive particles. It was established that the photons are generated by nuclearactive particles, whose energy is a hundredfold the enery of the photons. The study of electron-photon cascades at high altitudes, where the effective recording-layer is small, permits investigating the generation of the electron-photon component by the interaction of nuclearactive particles with energies of 10^{13} - 10^{14} ev., with light nuclei. The absolute intensity of the nuclearactive component was obtained on the assumption that on interacting with the carbon nucleus, the

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Absorption of high-enery ...

high-energy nucleon transmits 10% of its energy to the π^0-mesons. The conclusion was reached that the absorption length of nuclearactive particles with energies of 10^{11} to 10^{13} ev. does not change, remaining close to 120 gm/cm^2. In this energy range, the spectrum of the primary cosmic particles is

$$N(>E) = 900\left(\frac{E}{10^{12}}\right)^{-1,5} \quad \frac{\text{partiele}}{m^2 \text{ hour sterad}} \qquad (4)$$

4

The relation between the differential spectrum of the nucleactive component (expressed by $E_0^{-\gamma}$), the differential spectrum of the generated π-mesons ($E^{-\varepsilon}$), and the energy of the π-mesons (following the law $E_\pi = \text{const} \cdot E_0^{\beta}$), yields the formula

$$\beta = \frac{\gamma - 2}{\varepsilon - 2} \qquad (5)$$

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Absorption of high-energy ...

From the experimental data it follows that $\beta \sim 0.5$; with a correction for the small number of high-energy particles, one obtains $\beta \sim 1$. There are 4 figures, 4 tables and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc (including 1 translation). The references to the English-language publications read as follows: M. F. Kaplon, J. Z. Klose, D. M. Ritson, W. O. Walker, Phys. Rev., 91, 1573, 1953; K. Kamata, J. Nishimura, Suppl. of Progr. Theor. Phys., no. 6, 93, 1958.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR(Physics Institute im. P. N. Lebedev AS USSR); Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute of Nuclear Physics Moscow State University)

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

S/056/63/044/002/010/065
B102/B186

AUTHORS: Rubtsov, V. I., Smorodin, Yu. A., Tolkachev, B. V.

TITLE: The mean free path of $\sim 10^{12}$ ev nucleons in carbon

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 2, 1963, 462-468

TEXT: The mean free paths of cosmic nucleons in the 10^{12} ev range were determined for carbon at altitudes of 9 and 12 km. The experimental apparatus brought into these regions by an aeroplane, consisted of (from top to bottom): a graphite lump (325 g/cm^2), a lead plate (23 g/cm^2), a row of ionization counters (for the electron-photon showers), an aluminum lump (66 g/cm^2), lead (19 g/cm^2), another row of counters, lead (19 g/cm^2), counters, and again lead (25 g/cm^2). The total ionizations of the three chamber rows were recorded by a cylindrical ionization chamber (10·55 cm) filled with Ar to 6 atm. Its anodic pulses were amplified ($f = 1.5 \cdot 10^3$) and fed to oscilloscopes. For the second and third counter rows the lower limits of recording were made at 200 and 400 electrons, respectively. After a very careful determination of all

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The mean free path of ...

possible processes affecting the measurements and a correction for the background, the mean free path for inelastic nucleon interactions at $\sim 10^{12}$ ev in carbon was found to be 92^{+12}_{-8} g/cm^2. This value agrees with that found for nucleons of the 10^{10} ev range. The cross-section corresponding to this path length is $\sigma_o = 33 \pm 7$ mb; this value agrees with that measured for $2.5 \cdot 10^{10}$ ev (Cocconi, Proc. of the Conf. CERN, 1961). There are 3 figures and 5 tables.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: August 9, 1962

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"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

BARADZEY, L.T.; RUETSOV, V.I.; SMORODIN, Yu.A.; SOLOV'YEV, N.V.; TOLKACHEV, B.V.

Penetration of high-energy nucleons through the atmosphere, and the production of mesons. Trudy Fiz. inst. 26:224-248 '64. (MIRA 17:10)

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

"APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2

RUBTSOV, V.

Why aren't field histories kept? Zemledelie 27 no.5:86 My '65.
(MIRA 18:6)

1. Glavnyy agronom sovkhoza "Yuzhakovskiy", Sverdlovskoy oblasti.

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BARADZEY, L.T.; RUBTSOV, V.I.; SMORODIN, Yu.A.; SOLOV'YEV, M.V.

Penetration of high-energy nucleons through the atmosphere and the generation of mesons. Izv. AN SSSR. Ser. fiz. 28 no.11:1807-1811 N '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta i Fizicheskiy institut im. P.N. Lebedeva AN SSSR.

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SMIRNOV, V.S., dotsent; RUBTSOV, V.I., assistent

Prophylaxis of the complications of birth and postnatal diseases in cows. Veterinariia 41 no.3:65-69 Mr '64. (MIRA 18:1)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazeva.

APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R001445830004-2"

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L 16016-65 EWT(m) DIAAP/AFWL/SSD S/0048/64/028/011/1807/1811
ACCESSION NR: AP4049588

AUTHOR: Baradzey, L. T.; Rubtsov, V. I.; Smorodin, Yu. A.; Solov'yev, M. V. B 19

TITLE: Passage of high-energy nucleons through the atmosphere and the formation of mesons. [Report presented at the Vsesoyuznoye soveshchaniye po fizike kosmicheskikh luchey (All-Union Conference on Cosmic Rays), held in Moscow from 4 to 10 October 1963]

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v. 28, no. 11, 1964, 1807-1811

TOPIC TAGS: primary nucleon, cascade spectrum, nuclear component, terrestrial atmosphere, energy nuclear cascade, electron photon component, meson, pion

ABSTRACT: The spectrum of the primary nucleons in meson generation becomes sharper than the cascade spectra. The absorption of the active nuclear component in the terrestrial atmosphere may be determined by the ratio of the energy of secondary particles to the energy of the primary component, neglecting the magnitudes of these energies. The

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flux of the active nuclear component in the atmosphere at a depth t may be computed by using formulas for high energies and comparing the results with spectra of the nuclear cascades. The part of the energy transferred to the electron-photon component during the nuclear interaction is $0.22^{1.7}$. This result makes it possible to assume that the generation of π^0-mesons with energies of 10^{11}—10^{13} ev is proportional to the energy of active nuclear particles. The formation of π^+ and π^- mesons may resemble the formation of π^0 mesons, and the probability of all generated pions is $0.26^{1.7}$. An analysis of the data obtained shows that π^0 mesons are associated with showers whose energy is 10 times that of the π^0 meson energy. Orig. art. has: 2 figures, 5 formulas, and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics of the Moscow State University); Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences, SSSR)

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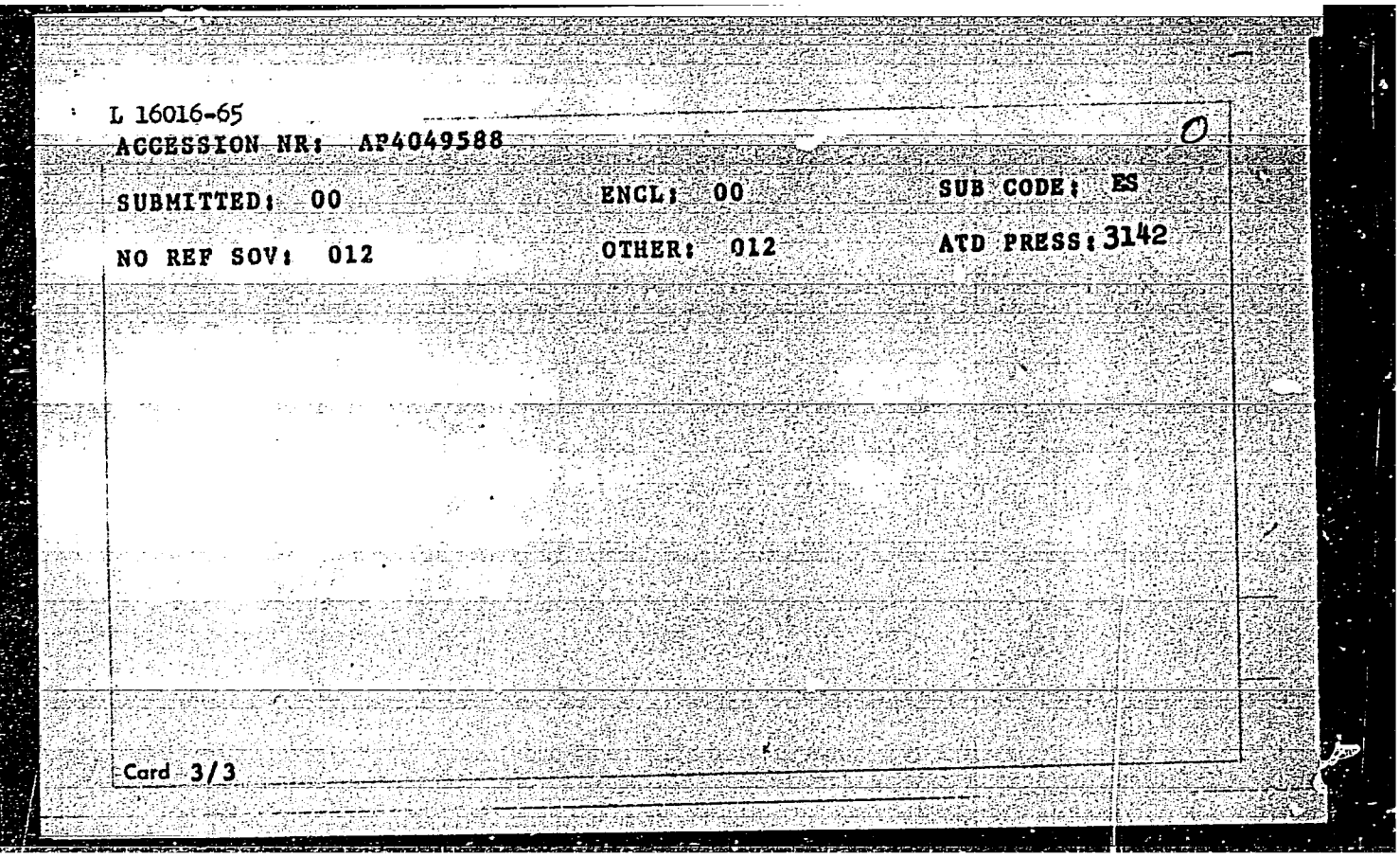

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